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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,879	07/10/2002	Martin Kessler	10191/2261	2929
26646	7590	12/18/2003	EXAMINER	
KENYON & KENYON ONE BROADWAY NEW YORK, NY 10004			RO, BENTSU	
			ART UNIT	PAPER NUMBER

2837

DATE MAILED: 12/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/070,879	KESSLER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Bentsu Ro	2837	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on 27 October 2003.

2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) 5 and 6 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 5 and 6 is/are rejected.

7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All    b) ☐ Some \* c) ☐ None of:

- 1. ☒ Certified copies of the priority documents have been received.
- 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.	6) <input type="checkbox"/> Other: _____.

## SECOND OFFICE ACTION --- A FINAL REJECTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5 and 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Burke et al US Patent No. 4,275,339. (This is a new reference.)

### Alternatively:

Claims 5 and 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Burke et al US Patent No. 4,275,339 in view of Park et al US Patent No. 4,347,464. (The Park's reference was cited previously by the examiner.)

Claims 5 and 6 are basically identical. Claims 5 and 6 are claiming the subject matter of applicant's Fig. 2 in which the windings L1 and L2 have opposite direction.

Burke et al Fig. 6 shows a circuit similar to that of applicant's Fig. 2 in which P1 winding and P3 winding are bifilar and P2 winding and P4 winding are another bifilar. Because the winding pairs P1, P2 and P3, P4 are bifilar, they are opposite in direction. Additionally, Burke et al Fig. 6 also includes a capacitor 46, which has an identical connection as that of applicant's capacitor C.

The only difference between applicant's Fig. 2 and Burke's Fig. 6 is the type of switching transistors wherein applicant teaches a MOSFET transistor whereas Burke teaches a bipolar transistor.

It is well known in the art that a bipolar transistor can be replaced by a MOSFET. Therefore, it would have been obvious to a skilled person in the art to use MOSFETs in the Burke's circuit to achieve the same subject matter as claimed.

Then why using a MOSFET??? One who studies microelectronic circuit will know that MOSFET, as compared to a bipolar transistor, requires much much less gate current. Further, MOSFET is smaller and easy to manufacture, therefore, MOSFET is cheaper. MOSFET has other advantages in analog IC circuits and logic circuits or analog plus logic circuits. For example, MOSFET logic does not require resistor.

Because MOSFET has many advantages over bipolar transistor, it would have been obvious to use MOSFETs in the Burke's circuit to achieve the same subject matter as claimed.

Alternatively

Using MOSFETs as switching transistors is taught by Park et al. In view of Park's teaching, it would have been obvious to a skilled person in the art to substitute Park's bipolar transistors with Park's MOSFETs to achieve the same subject matter as claimed.

The reasons for using Park's MOSFETs is the same as explained in the preceding paragraphs.

3. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al US Patent No. 4,347,464 in view of any one of the following US Patents:

Burke et al 4,275,339  
Loyzim 3,684,934  
Ehsani 5,291,115  
Horst 5,844,343.

With respect to Park et al teaching, applicant is referred to the First Office Action for the details.

In the amendment, applicant further sets forth the connection of the smoothing capacitor by calling "*a smoothing capacitor connected in parallel to the series circuits of the MOSFETs and windings between the voltage and ground...*".

In applicant's drawings Fig. 1 and Fig. 2, both show a smoothing capacitor C connected in parallel with the winding/MOSFET series circuit, or connected to a power source.

Park et al do not teach a smoothing capacitor connected to a power source or in parallel to the winding/MOSFET series circuit. However, a capacitor connected in parallel to the power source or connected in parallel to the winding/MOSFET or connected in parallel to the winding/transistor is taught by:

- (1) Burke et al. Burke clearly shows a capacitor 46 connected in parallel to the power source or in parallel to the winding/transistor series circuit;
- (2) Loyzim. Loyzim Fig. 1 shows a motor power supply 13 including a parallel connected capacitor 43;

- (3) Ehsani. Ehsani Fig. 7 shows a capacitor C connected in parallel to the winding/MOSFET series circuit and in parallel to a power source 42;
- (4) Horst. Horst Fig. 4A shows a capacitor C1 connected in parallel to the winding/MOSFET series circuit and in parallel to a power source 42.

The capacitor of the above mentioned prior arts is a smoothing capacitor.

In view of the foregoing prior art teachings, it would have been obvious to a skilled person in the art to add a smoothing capacitor, as taught by the above mentioned prior arts, to the Park's FET MOTOR DRIVE SYSTEM to achieve the same subject matter as claimed.

Then why adding a smoothing capacitor to the Park's system???

A smoothing capacitor connected in parallel to the power source and/or in parallel to the winding/MOSFET series circuit will remove switching ripple caused by the switching of the transistor which makes the dc source more stable. A stable dc source runs the motor more smoothly.

It is very important to note that most dc power sources have a parallel connected smoothing capacitor, which may include in the power source of Park et al (not shown).

4. Applicant's arguments with respect to claims 5 and 6 have been considered but are moot in view of the new ground(s) of rejection.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CAR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CAR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication should be directed to Bentsu Ro at telephone number 703 308-3656.

December 10, 2003

Bentsu Ro  
Bentsu Ro  
Primary Examiner